

GENERAL CHEMISTRY I (CHEM 101)

Course description: General chemistry, an introduction to Chemistry and chemical principles. This course is classified as a General Education course.

Prerequisites: A grade of "C" or better in Math 113 or a math score of 22 on the enhanced ACT or permission of the department head.

Textbook: "Essentials of General Chemistry," 2nd Ed., Darrel D. Ebbing, Steven D. Gammon & Ronald O. Ragsdale, Houghton Mifflin, New York, NY (2006). ISBN: 0-618-49175-9

Course Objectives/Student Learning Outcomes: This course is classified as a General Education course and addresses general education competencies (GEC) 1a and 2-7. After completing the course the student will be able to:

- understand and apply the scientific method (GEC 5)
- be able to manipulate numerical data and use statistical methods (GEC 4)
- read and analyze with comprehension (GEC 2)
- reason abstractly and think critically (GEC 3)
- apply inorganic nomenclature to compounds (GEC 2,3,7)
- understand atomic theory and periodicity (GEC 2,3,7)
- understand states of matter and apply equations relating to those states (GEC 2,3,4,7)
- write and balance equations properly and apply moles and numerical data to such equations (GEC 2,3,4,7)
- understand and explain the concepts of ionic and covalent bonding (GEC 2,3,7)
- be able to produce Lewis dot structures for compounds (GEC 2,3,7)
- to apply valence shell electron pair repulsion theory to predict the structure of compounds (GEC 2,3,7)
- in nuclear chemistry, to understand radioactivity, nuclear decay, balance nuclear reactions, understand the processes of fission and fusion, and the application of half-lives to determine amounts of radioactive material after time (GEC 2,3,4,7)

Assessment: In the lecture portion of the class, assessment of progress will be determined by classroom tests and a comprehensive departmental final. The classroom tests may include essays, short answers and multiple choice questions, along with various calculations. The departmental final will be a comprehensive multiple choice test.

The laboratory section of the class assessment will be via a departmental quiz, grading of written laboratory reports and a comprehensive departmental laboratory final. The departmental laboratory final will be a multiple choice test.

The above is only an approximate guide to lectures. To get the most out of lectures, students should read the material **PRIOR** to the lecture. Subjects may be covered more slowly or more quickly as appropriate.

Course Requirements and Evaluation: In the lecture portion of this class, students will be required to read and comprehend material covered in lecture as well as any assigned readings. There will be four 100 point hourly tests plus a final exam. The final exam will be a comprehensive, multiple-choice,

computer generated exam. The final will be 25% of the lecture grade. Borderline grades will be determined by considering attendance. 80% of your final grade will be from the lecture tests.

The laboratory portion of the class will require students to read and comprehend material covered in pre-lab lectures as well as any assigned readings. Performance of laboratory work accounts for 20 % of your grade.

The grading scale is a ten point grading scale.

A = 100-90 %; B = 89-80 %; C = 79-70 %; D = 69-60 %; F = 59-0 %

ABSOLUTELY NO WN GRADE WILL BE GIVEN UNDER ANY CONDITION.

Make-ups and Absences: Please refer to the "Class Attendance Regulations" in the McNeese Catalog. You are expected to attend every class period. Only medical excuses or prior permission will be accepted for absences from exams. All make-up exams will be given the last week of the semester. All excuses must be submitted to the instructor.

Classroom Etiquette: Eating, drinking or any other disruptive activities (such as loud talking in class) will not be allowed. Any student who does not obey these rules will be expelled from class and will not be allowed to return. If you have to leave class early for any reason, or if you will be coming late to class on a regular basis, you must obtain the instructor's permission in advance. No one may leave class for any reason after class has begun. **TURN OFF YOUR CELL PHONE!!**

Methods of Instruction: For the lecture component, instruction will consist of classroom lectures and discussions, assigned readings, homework and written assignments. The laboratory portion will consist of pre-lab lectures/discussions, timely and efficient performance of laboratory work and timely submission of laboratory reports.

Course and University Policies:

Diversity Statement: *Students should visit the MSU webpage at <http://www.mcneese.edu/policy/diversity.htm> for information about diversity awareness and sexual harassment policies and procedures.*

ADA Statement: Any student with a disability is encouraged to contact the Office of Services for Students with Disabilities in Drew Hall, Room 200, [\(337\) 475-5916](tel:3374755916) or [\(337\) 475-5722](tel:3374755722). It is each student's responsibility to register with the Office of Services for Students with Disabilities when requesting any reasonable accommodation. Students should visit the MSU web page at www.mcneese.edu/administration/vpsse/swd/ for information about policies and procedures regarding students with disabilities and www.mcneese.edu/policy/diversity.php for information about diversity awareness and sexual harassment policies and procedures.

A student with a disability is responsible for locating the emergency exits and the areas of refuge in a classroom building. The student is then encouraged to develop an evacuation plan and discuss the plan with the instructor.

Academic Integrity Statement: *McNeese State University seeks to strengthen the value of student academic achievement by fostering a learning environment which is based on honesty, respect, fairness, responsibility, and excellence. Consequently, the University expects students to demonstrate*

honesty and integrity in all academic relationships. Please visit <http://www.mcneese.edu/integrity/> for details on this policy.

Course content: The following is a tentative outline of the topics/chapters and timeline for the course.

WEEK	TOPIC	TEXT READING
	Welcome to Chemistry 101	
	Chemistry and Measurement , Chapter 1	1.3 - 1.4;1.5 - 1.8
	Atoms, Molecules and Ions, Chapter 2	2.1 – 2.5
	Quantum Theory of the Atom, Chapter 7	7.1 – 7.5
	Electron Configuration and Periodicity, Chapter 8	8.1 – 8.6
	Examination 1: Chapters 1, 2 and 7, 8	
	Atoms, Molecules and Ions, Chapter 2	2.8 – 2.9
	Ionic and Covalent Bonding Chapter 9	9.1;9.3 – 9.11
	Chemical Reactions, Chapter 4	4.5
	Calculations with Chemical Formulas and Equations, Chapter 3	3.1 – 3.8
	Examination 2: Chapters 2, 3, 4, and 9	
	Nuclear Chemistry, Chapter 20	20.1 – 20.5
	Gas Laws, Chapter 5	5.1 – 5.7
	Chemical Reactions, Chapter 4	4.1 -4.6
	Acids and Bases, Chapter 19	19.1
	Examination 3: Chapters 4, 19 and 20	
	Chemical Reactions, Chapter 4	4.7 – 4.10
	Dilution, titration, mol fraction, Chapter 12	12.4
	States of Matter, Chapter 11	11.1 – 11.2; 11.4
	Molecular Geometry and Chemical Bonding Theory, Chapter 10	10.1 – 10.4
	Examination 4: Chapters 4, 10, 11, and 12	
	FINAL EXAM	